

REMARKS

In an Office Action dated August 10, 2005, the Examiner rejected claims 9, 10, 22, and 23 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention. In particular, the Examiner objected to phrases that the Examiner contended were improper broad recitations. The Examiner rejected claims 1-3, 5, 6, 11-13, 15, and 16 under 35 U.S.C. §102(e) as being anticipated by Gross et al. (U.S. patent no. 6,556,809, hereinafter referred to as "Gross"). The Examiner rejected claims 7 and 17 under 35 U.S.C. §103(a) as being unpatentable over Gross in view of Rashid-Farrokhi et al. (U.S. patent no. 6,304,750). The Examiner objected to claims 4, 8, 14, and 18-22 as being dependent upon a rejected base claim but as being allowable if rewritten in independent form to include all of the limitations of the base claim and any intervening claims. The rejections are traversed and reconsideration is hereby respectfully requested.

The applicant has amended each of claims 9 and 22 by providing for an assumption of a high geometry propagation environment. As this is a term known in the art, the applicant respectfully requests that the Examiner withdraw the §112 rejection of claims 9 and 22. The applicant has also amended each of claims 10 and 23 by deleting the objected to phrase. Accordingly, the applicant respectfully requests that the Examiner withdraw the §112 rejection of claims 10 and 23.

The Examiner rejected claims 1-3, 5, 6, 11-13, 15, and 16 under 35 U.S.C. §102(e) as being anticipated by Gross. Claim 1 has been amended to clarify the claim, providing that each subscriber unit of the multiple subscriber units is associated with a different beam of multiple beams.

In rejecting claim 1, the Examiner contended that Gross teaches a transmitting communication device (FIG. 1 (110)) having an antenna array (FIG. 2 (204)) comprising multiple array elements (col. 4, lines 10-17), wherein multiple weighting coefficients are jointly optimized to produce multiple optimized weighting coefficients for use in transmitting to multiple subscriber units, and wherein each optimized weighting coefficient is associated with an element of the multiple array elements and is further

associated with a subscriber unit of the multiple subscriber units (Abstract, col. 1, lines 8-14, col. 2, lines 33-40, col. 3, lines 6-12, col. 4, lines 10-37, col. 5, lines 1-13, col. 7, lines 1-23 and 42-45, col. 9, lines 44-45 and 51-53, col. 10, lines 38-45, and col. 12, lines 9-16).

However, the only reference in Gross to a joint optimization is in column 10, line 44, where Gross mentions to "jointly maximize SINR for multiple simultaneous users within the beam." Not only does Gross not teach how to perform such an optimization, but furthermore this is an optimization of a single beam that is used by multiple users that have been assigned that beam. By contrast, claim 1 teaches a joint optimization of weighting coefficients associated with multiple beams, that is, a joint optimization of weighting coefficients associated with multiple users each user of multiple users is associated with a different beam of the multiple beams. Such features are nowhere taught by Gross. Accordingly, the applicant respectfully requests that claim 1 may now be passed to allowance.

Since claims 2-4 depend upon allowable claim 1, the applicant respectfully requests that claims 2-4 may now be passed to allowance.

Claim 11 includes features of jointly optimizing multiple weighting coefficients for use in transmissions to multiple subscriber units, wherein each weighting coefficient of the multiple weighting coefficients is associated with an element of multiple elements and is further associated with a subscriber unit of multiple subscriber units and wherein each subscriber unit of the multiple subscriber units is associated with a different beam of multiple beams. As described in detail above, Gross does not teach such a limitation. Accordingly, the applicant respectfully requests that claim 11 may now be passed to allowance.

Since claims 12-14 depend upon allowable claim 11, the applicant respectfully requests that claims 12-14 may now be passed to allowance.

Claims 5 and 15 each includes features of approximating one or more terms in an expression which jointly optimizes a signal-to-noise ratio (SNR) for multiple subscriber

units to produce an approximation of the joint optimization expression of an SNR, wherein each subscriber unit of the multiple subscriber units is associated with a different beam of multiple beams. As described in detail above, nowhere does Gross teach a joint optimization for multiple users that are each associated with a different beam of multiple beams. Accordingly, the applicant respectfully requests that claim 5 may now be passed to allowance.

Since claims 6-10 depend upon allowable claim 5 and claims 16-23 depend upon allowable claim 15, the applicant respectfully requests that claims 6-10 and 16-23 may now be passed to allowance.

As the applicant has overcome all substantive rejections and objections given by the Examiner and has complied with all requests properly presented by the Examiner, the applicant contends that this Amendment, with the above discussion, overcomes the Examiner's objections to and rejections of the pending claims. Therefore, the applicant respectfully solicits allowance of the application. If the Examiner is of the opinion that any issues regarding the status of the claims remain after this response, the Examiner is invited to contact the undersigned representative to expedite resolution of the matter.

Respectfully submitted,

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